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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/803,879 | 03/19/2004 | Masateru Koide | 1046.1318 | 7149 |

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EXAMINER

TRINH, HOA B

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|----------|--------------|
| ART UNIT | PAPER NUMBER |
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2814

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/803,879 | Applicant(s) KOIDE ET AL. | |
| | Examiner Vikki H. Trinh | Art Unit 2814 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2006.
 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) 1 and 12-20 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 2-11 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 16 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II, claims 2-11, in the reply filed on 11/03/05 is acknowledged.
2. Claims 1, 12-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/03/05.

Drawings

3. The replacement figures 18-21 have been accepted.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2-6, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA), figures 18-21, in view of Oda (JP 08-274214, applicant cited).

APA discloses a packaging structure having a first substrate 153 (fig. 18 or fig.21) with an opening 157 (fig. 18 or fig.21); a second substrate 150 laminated on the first substrate and covering the opening; a first electronic part 152 inserted inside of the opening 157; and a second electronic part 151 bonded to a surface of the exposed side of the second substrate 150 and wiring for connecting the first part to the second electronic part; the first substrate 153 includes a sustaining member 152 (fig. 18 or fig.21) provided within the opening 157 (fig. 18 or fig. 21).

However, APA does not explicitly teach that a hard resin filled an interior of the opening to a fixed or larger thickness.

Oda discloses an analogous device having a substrate 1 (abstract) with an opening and thin metal plate bonded and covered the opening; and an electronic part 2 (abstract) inserted into the opening and a hard resin 8 (abstract) filled the interior of the opening, sustaining the electronic part 2 and sustaining an exposed surface of the resin 8.

Therefore, as to claim 2, it would have been obvious to one of ordinary skill in the art at the time the invention of made to modify the invention of APA with the hard resin , as taught by Oda, so as to secure the first electronic part within the opening.

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As to claim 3, the second substrate 150 (fig. 21) is a thin film.

As to claim 4, the first electronic part is a capacitor 152, and the second electronic part is an LSI 151 (fig. 21).

As to claim 5, Oda teaches the resin 8 contains a filler agent (abstract) for filling the opening.

As to claim 6, Oda teaches that the resin 8 is made of an epoxy material which is used according to its coefficient of thermal expansion considering the materials used to make for the first and second substrates 1, 10 (abstract).

As to claim 9, the second substrate 150 (fig. 21) has a stiffener for reinforcement.

As to claim 10, the stiffener (elements interposed between the first substrate and the second substrate) (fig. 21) is provided on the side of the first electronic part 152.

As to claim 11, the stiffener (fig. 21) is provided on an outer peripheral edge of the thin film substrate 150.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA), figures 18-21, in view of Oda, and further in view of Umezawa (5,990,550)

APA in view of Oda discloses the invention substantially as claimed. However, APA in view of Oda does not explicitly teach that a fin attached to the electronic parts.

Umezawa discloses an analogous method for making the packaging device having a fin 6b (fig. 1) attached to an electronic device 1 (fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of APA in view of Oda with the fin, as taught by

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Umezawa, so as to provide a cooling structure to dissipate heat from the electronic device (col. 1, lines 5-10).

Response to Arguments

8. Applicant's arguments filed 07/16/06 have been fully considered but they are not persuasive.

9. In the remarks, applicants argue that APA in view of Oda lacks the limitation of "sustaining a member and sustaining an exposed surface of the resin". On the contrary, APA in view of Oda teaches all of the limitation as claimed. As stated in the rejection, Oda shows the electronic part 2 sustains in the opening of the first substrate and the resin fills the opening and sustains an exposed surface area (see abstract). Therefore, Oda cures the deficiency in APA. For the fore going reason, the rejection is proper.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached from Monday-Friday, 9:00 AM - 5:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705. The office fax number is 703-872-9306.

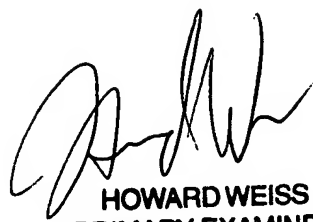
Any request for information regarding to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Also, status information for published applications may be obtained from either Private PAIR or Public Pair. In addition, status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. If you have questions pertaining to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests

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to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

Vikki Trinh,
Patent Examiner
AU 2814



HOWARD WEISS
PRIMARY EXAMINER